

and for transmitting at a corrected frequency whose value is responsive to the frequency deviation, so that the signals received at the base have a frequency corrected for that deviation, and wherein said base station further includes means for transmitting Automatic Power Control (APC) signals to said subscriber units, and wherein said subscriber units further include means for controlling the power of transmissions therefrom responsive to said received APC signals.

62. In a unidirectional or broadcasting communication system using OFDM transmission from a base station to subscriber units, means for achieving a bi-directional channel comprising:

A. transmitting means in the subscriber units for transmitting second signals that are orthogonal to first signals transmitted from the base station and are also orthogonal to signals from other subscriber units;

B. receiving means in the base station for receiving and processing together the second signals from a plurality of subscriber units;

C. means at each subscriber unit for adapting the frequency of the second signal to frequency deviations of a signal received from the base station, and for transmitting at a corrected frequency whose value is responsive to the frequency deviation, so that the signals received at the base have a frequency corrected for that deviation, and further including means for implementing a dynamic allocation of carriers or TDMA slots to subscribers, according to their bandwidth demands.

63. In a unidirectional or broadcasting communication system using OFDM transmission from a base station to subscriber units, means for achieving a bi-directional channel comprising:

A. transmitting means in the subscriber units for transmitting second signals that are orthogonal to first signals transmitted from the base station and are also orthogonal to signals from other subscriber units;

B. receiving means in the base station for receiving and processing together the second signals from a plurality of subscriber units;

C. means at each subscriber unit for adapting the frequency of the second signal to frequency deviations of a signal received from the base station, and for transmitting at a corrected frequency whose value is responsive to the frequency deviation, so that the signals received at the base have a frequency corrected for that deviation, and further including means for implementing a dynamic allocation of carriers or CDMA codes to subscribers, according to their bandwidth demands.

64. In a unidirectional or broadcasting communication system using OFDM transmission from a base station to subscriber units, means for achieving a bi-directional channel comprising:

A. transmitting means in the subscriber units for transmitting second signals that are orthogonal to first signals transmitted from the base station and are also orthogonal to signals from other subscriber units;

B. receiving means in the base station for receiving and processing together the second signals from a plurality of subscriber units;

C. means at each subscriber unit for adapting the frequency of the second signal to frequency deviations of a signal received from the base station, and for transmitting at a corrected frequency whose value is responsive to the frequency deviation, so that the signals received at the base have a frequency corrected for that deviation, and wherein the second signals further include a combination of CDMA modulation codes and OFDM coding/decoding means to achieve orthogonality between signals from various users in an uplink.

65. In a unidirectional or broadcasting communication system using OFDM transmission from a base station to subscriber units, means for achieving a bi-directional channel comprising:

A. transmitting means in the subscriber units for transmitting second signals that are orthogonal to first signals transmitted from the base station and are also orthogonal to signals from other subscriber units;

B. receiving means in the base station for receiving and processing together the second signals from a plurality of subscriber units;

C. means at each subscriber unit for adapting the frequency of the second signal to frequency deviations of a signal received from the base station, and for transmitting at a corrected frequency whose value is responsive to the frequency deviation, so that the signals received at the base have a frequency corrected for that deviation, wherein the second signals further include a combination of CDMA modulation codes and OFDM coding/decoding means to achieve orthogonality between signals from various users in an uplink, and wherein the CDMA modulation codes comprise orthogonal Walsh codes.

66. In a unidirectional or broadcasting communication system using OFDM transmission from a base station to subscriber units, means for achieving a bi-directional channel comprising:

A. transmitting means in the subscriber units for transmitting second signals that are orthogonal to first signals transmitted from the base station and are also orthogonal to signals from other subscriber units, and wherein the second signals are encoded in OFDM;

B. receiving means in the base station for receiving and processing together the second signals from a plurality of subscriber units, including OFDM decoding means comprising an FFT processor operating on an input channel and a transversal filter means that reduces a pulse widening because of a window in a transmitter, and wherein said base station further includes means for transmitting Automatic Power Control (APC) signals to said subscriber units, and wherein said subscriber units further include means for controlling the power of transmissions therefrom responsive to said received APC signals.

67. In a unidirectional or broadcasting communication system using OFDM transmission from a base station to subscriber units, means for achieving a bi-directional channel comprising:

A. transmitting means in the subscriber units for transmitting second signals that are orthogonal to first signals transmitted from the base station and are also orthogonal to signals from other subscriber units, and wherein the second signals are encoded in OFDM;

B. receiving means in the base station for receiving and processing together the second signals from a plurality of subscriber units, including OFDM decoding means comprising an FFT processor operating on an input channel and a transversal filter means that reduces a pulse widening because of a window in a transmitter, and further including means for implementing a dynamic allocation of carriers or TDMA slots to subscribers, according to their bandwidth demands.

68. In a unidirectional or broadcasting communication system using OFDM transmission from a base station to subscriber units, means for achieving a bi-directional channel comprising:

A. transmitting means in the subscriber units for transmitting second signals that are orthogonal to first signals transmitted from the base station and are also orthogonal to signals from other subscriber units, and wherein the second signals are encoded in OFDM;

B. receiving means in the base station for receiving and processing together the second signals from a plurality of subscriber units, including OFDM decoding means comprising an FFT processor operating on an input channel and a transversal filter means that reduces a pulse widening because of a window in a transmitter, and further including means for implementing a dynamic allocation of carriers or CDMA codes to subscribers, according to their bandwidth demands.

69. In a unidirectional or broadcasting communication system using OFDM transmission from a base station to subscriber units, means for achieving a bi-directional channel comprising:

A. transmitting means in the subscriber units for transmitting second signals that are orthogonal to first signals transmitted from the base station and are also orthogonal to signals from other subscriber units, and wherein the second signals are encoded in OFDM;

B. receiving means in the base station for receiving and processing together the second signals from a plurality of subscriber units, including OFDM decoding means comprising an FFT processor operating on an input channel and a transversal filter means that reduces a pulse widening because of a window in a transmitter, and wherein the second signals further include a combination of CDMA modulation codes and OFDM coding/decoding means to achieve orthogonality between signals from various users in an uplink.

70. In a unidirectional or broadcasting communication system using OFDM transmission from a base station to subscriber units, means for achieving a bi-directional channel comprising:

A. transmitting means in the subscriber units for transmitting second signals that are orthogonal to first signals transmitted from the base station and are also orthogonal to signals from other subscriber units, and wherein the second signals are encoded in OFDM;

B. receiving means in the base station for receiving and processing together the second signals from a plurality of subscriber units, including OFDM decoding means comprising an FFT processor operating on an input channel and a transversal filter means that reduces a pulse widening because of a window in a transmitter, wherein the second signals further include a combination of CDMA modulation codes and OFDM coding/decoding means to achieve orthogonality between signals from various users in an uplink, and wherein the CDMA modulation codes comprise orthogonal Walsh codes.--